Project Achievements

Two years after reconstruction

DEQ and NRDP have only begun remediation and restoration of Silver Bow Creek, and significant improvements have occured in the ecosystem including:

Improved Water Quality - The quality of both surface water and groundwater within the area has improved greatly compared to preconstruction levels. Upstream cleanup work in Butte is responsible for much of the improvement in the stream quality; however, it is imperative that comprehensive cleanup occurs in the Butte Priority Soils Operable Unit (BPSOU) to protect work along Silver Bow Creek. An EPA plan for the BPSOU will be issued this summer or fall. Recent sampling of Silver Bow Creek found no metals concentrations above drinking water standards and metals concentrations much closer to meeting aquatic life standards than prior to construction.

Better Biological Diversity - Biological indicators such as aquatic insect diversity already show improvement from cleanup efforts completed at the site. Algal composition has also changed since remedial actions have begun, with a greater presence of species that are sensitive to metals.

Successful Revegetation - Through replacement of tailings and contaminated soils in the floodplain of upper Silver Bow Creek with clean material and organic matter, revegetation efforts have been successful. Wicking of metallic salts to the ground surface, common in the area previously, has been reduced. Grasses and forbs are well established through much of the remediated area, and the enhanced shrub and tree plantings resulting from activities funded by Restoration Grants are exhibiting a high survival rate. As the construction workers have revegetated the area, they have implemented an aggressive weed management program to prevent invasion of weeds.

Stabilized Stream Channel - The new stream channel constructed in the upper reaches of Silver Bow Creek has successfully weathered high flows, and vegetation is well established on its banks. Pools and other habitat features added by restoration funding are functioning as designed and providing increased aquatic habitat diversity.

Administrative Success - The State of Montana has shown that it can manage both remedy and restoration activities as one, integrated project and still maintain clear distinctions between the funding sources for accounting purposes.

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Remediation and Restoration of Silver Bow Creek
A Superfund Success Story

Spring 2003

The cleanup of Silver Bow Creek has been ongoing since 1999 as part of a Superfund remedial action being coordinated by the Montana Department of Environmental Quality (DEQ) in consultation with the U.S. Environmental Protection Agency (EPA). In 2000, the Natural Resource Damage Program (NRDP) of the Montana Department of Justice formed a partnership with DEQ, bringing a restoration component to the project that goes beyond remediation required under Superfund. In this brochure, we provide a brief history of the project, updates regarding the current status of the project, and descriptions of activities contemplated at the site over the next decade.

PROJECT BACKGROUND

The Problem

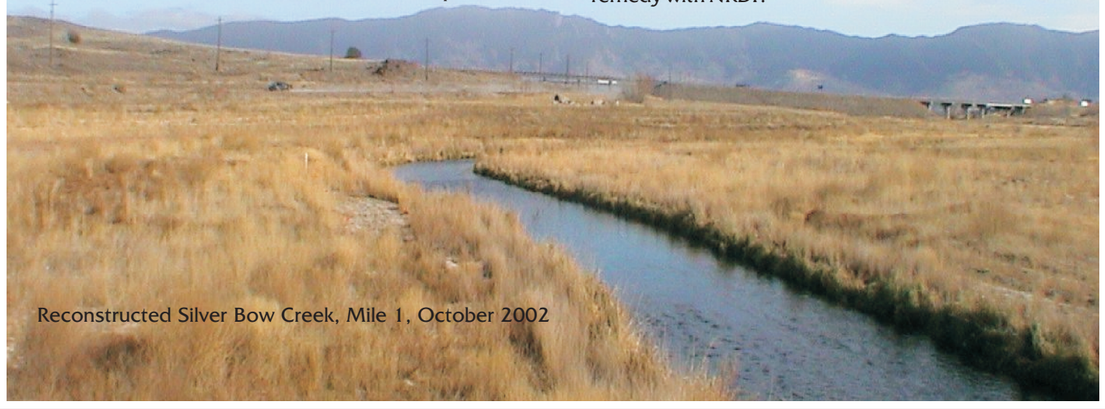
Silver Bow Creek extends from Butte approximately 23 miles to the Warm Springs Ponds, a treatment facility located near the headwaters of the Clark Fork River (see map). Since the late 1800s, tailings and other mine wastes containing elevated concentrations of metals have been discharged to or otherwise entered Silver Bow Creek. These toxic discharges produced a metals-impacted floodplain and streambed sediments and virtually eliminated aquatic life in the stream. Tailings deposited in the floodplain are toxic to plants and have resulted in a floodplain that is largely devoid of vegetation and is largely incapable of supporting wildlife.

The Remedial Response

In 1983, EPA listed the Silver Bow Creek/Butte area as one of multiple Superfund sites in the Upper Clark Fork River Basin. The agency later designated approximately 23 stream miles of Silver Bow Creek as an operable unit (OU) within this overall Superfund site. The Streamside Tailings Operable Unit (SSTOU) has become one of the areas of focus for Superfund cleanup in the Butte area. Initially, EPA named ARCO as the primary party responsible for remediation of the SSTOU and other Superfund sites in the Upper Clark Fork Basin through its acquisition of the Anaconda Company. EPA and DEQ issued a Record of Decision (ROD) for the site in November 1995 that identifies the final site remedy and the agencies' rationale for selecting that remedy. The major remedial action that resulted from issuance of the ROD is excavation of tailings and related impacted soils from the floodplain of Silver Bow Creek and reconstruction of the stream channel and floodplain. For planning purposes, the SSTOU was divided into four subareas (Subareas 1 - 4), each with a distinct geologic and geographic character (see map).

The NRDP Connection

In a 1999 state, federal and tribal settlement, ARCO agreed to pay $215 million to the State to resolve certain claims. From the settlement amount, $80 million plus interest was set aside for DEQ and EPA to implement the remedy for Silver Bow Creek. Some of the remaining amount is being used to enhance the cleanup of Silver Bow Creek through various habitat improvements and restoration actions. DEQ and EPA are coordinating the cleanup of the Silver Bow Creek remedy with NRDP.


Reconstructed Silver Bow Creek, Mile 1, October 2002